DIABETES BASICS

Overall Goal:

Learning Objectives

Participants will learn:

- What is diabetes?
- Basic components of diabetes
- Short and long term consequences of diabetes
Diabetes in the Schools

Diabetes Mellitus

The name “diabetes mellitus means sweet urine. It stems from ancient times when physicians would taste a patient’s urine as a part of a diagnosis.

Your goal is to maintain normal blood glucose levels

Glucose in blood Excessive blood glucose

U.S. Diabetes Prevalence
All Ages, 2005

- 20.8 million people have diabetes

- Diagnosed: 14.6 million people
  - Type 1 diabetes accounts for 5 – 10%
  - Type 2 diabetes accounts for 90 – 95%

- Undiagnosed: 6.2 million people
**Diabetes Complications**

- 2 in 3 people with diabetes die of heart disease or stroke
- Diabetes is the #1 cause of adult blindness
- Diabetes is the #1 cause of kidney failure
- Diabetes causes more than 60% of non-traumatic lower-limb amputations each year

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**EVERY 24 HOURS**

- New Cases – 4,100
- Deaths – 810
- Amputations – 230
- Kidney Failure – 120
- Blindness - 55

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**Estimated Cost of Diabetes in U.S.**

- Total: $132 billion
- Direct Medical Cost: $92 billion
- Indirect Cost: $40 billion
What is Diabetes?

Body does not make or properly use insulin:
- no insulin production
- insufficient insulin production
- resistance to insulin’s effects

No insulin to move glucose from blood into cells:
- high blood glucose means:
  - fuel loss, cells starve
  - short and long-term complications

Type 1 Diabetes

- autoimmune disorder
- insulin-producing cells destroyed
- daily insulin replacement necessary
- age of onset: usually childhood, young adulthood
- most prevalent type of diabetes in children and adolescents

Type 1 Diabetes

<table>
<thead>
<tr>
<th>ONSET</th>
<th>relatively quick</th>
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<tbody>
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<td>SYMPTOMS</td>
<td>increased urination, tiredness, weight loss</td>
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**Type 2 Diabetes**

- **Insulin resistance**
- Insulin production is low
- Age at onset:
  - Most common in adults
  - Increasingly common in children
    - overweight
    - inactivity
Diabetes is Managed, But it Does Not Go Away.

**GOAL:**
To maintain target blood glucose

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How our bodies use insulin and glucose

**NORMAL FUNCTIONING**
Insulin is the key to letting the glucose enter the cell. Glucose in the cell is transformed into energy for the body.

**TYPE I DIABETES**
In Type I diabetes, the pancreas is not producing insulin; therefore, the glucose is not able to enter the cell.

**TYPE II DIABETES**
In Type II diabetes, the pancreas still produces insulin, but not enough to help adequate amounts of glucose into the cells.
Diabetes Management 24/7

Constant Juggling:

- Insulin/medication
- Exercise
- Food intake

Client Teaching

- Recognition of symptoms for hypoglycemia and hyperglycemia
- 15/15 rule
- Foods high in sugar
- Insulin injections
- Insulin sliding scale
- Medications for type II Diabetes
- Exercise

The symptoms of Hypoglycemia include:

- Shakiness
- Dizziness
- Sweating
- Hunger
- Headache
- Clumsy or jerky movements
- Seizure
- Difficulty paying attention, or confusion
Hyperglycemia

- The signs and symptoms include:
  - high blood glucose
  - high levels of sugar in the urine
  - frequent urination
  - increased thirst
  - Increased hunger (especially after eating)
  - Diabetic coma (loss of consciousness)
Exercise & Diabetes

Everyone benefits from exercise and physical activity. In general, exercise lowers blood sugar levels.

- May need to make adjustments to insulin/medications and food intake.
- A quick-acting source of glucose, glucose meter, and water should always be available.
- Must be familiar with symptoms of both high and low blood glucose.